Claim Amendments

1-39. (canceled)

40. (currently amended) The method of claim [37]60, further comprising roughening at least a region of the surface of the [stent]implantable medical device prior to applying the coating.

41. (currently amended) The method of claim [37]60, further comprising applying a primer on the surface of the [stent]implantable medical device prior to applying the coating.

42. (previously amended) The method of claim 41, wherein the primer is made of a material selected from a group consisting of ethylene vinyl alcohol copolymer, polycystine, polylysine, and reactive silanes, the reactive silanes comprising trimethoxysilane.

43. (previously amended) The method of claim 41, further comprising roughening at least a region of the surface of the [stent]implantable medical device prior to applying the primer.

44. (previously amended) The method of claim 41, further comprising heat-treating the coating.

45. (previously amended) The method of claim 41, wherein the primer contains at least one chlorosilane compound.

46. (previously amended) The method of claim 45, wherein the chlorosilane compound has a functional head.

47. (previously amended) The method of claim 46, wherein the functional head comprises an unsaturated group, an amino group, or a carboxyl group.

48. (currently amended) The method of claim ~~37~~60, wherein the complex of heparin is DURAFLO an ionically bound heparin.

49. canceled.

50. (currently amended) The method of claim ~~49~~62, wherein the adhesion enhancer is selected from a group consisting of poly(ethylene glycol), poly(ethylene oxide), poly(vinylpyrrolidone), poly(vinyl alcohol), poly(caprolactone), poly(glycolic acid), hyaluronic acid, polyurethanes, copolymers of caprolactone and glycolic acid, copolymers of caprolactone and ethylene glycol, segmented polyurethanes, and mixtures thereof.

51. (currently amended) The method of claim ~~49~~62, wherein the coating is performed by dip coating or spraying.

52. (currently amended) The method of claim ~~49~~62, further comprising roughening at least a region of the surface of the device prior to coating.

53. (previously amended) A method of coating a stent, the method comprising:

a) roughening at least a region of the surface of the stent; and

b) applying a coating to the stent, the coating containing a complex of heparin with an aromatic quaternary ammonium ion dispersed in a copolymer of ethylene with vinyl alcohol.

54. (previously amended) The method of claim 53, further comprising heat-treating the coating.

55. (previously amended) The method of claim 54, wherein the heat-treating is conducted within a temperature range of about 50°C to about 100°C.

56. (previously amended) The method of claim 53, wherein the roughening is performed by argon plasma etching.

57. (previously amended) The method of claim 53, further comprising applying a primer on the surface of the stent prior to applying the coating.

58. (previously amended) A method of coating a stent, the method comprising:

a) applying a coating to the stent, the coating containing a complex of heparin with an aromatic quaternary ammonium ion dispersed in a copolymer of ethylene with vinyl alcohol; and

b) heat-treating the coating.

59. (previously amended) The method of claim 58, wherein the heat-treating is conducted within a temperature range of about 50°C to about 100°C.

60. (new) A method of coating an implantable medical device wherein the method comprises applying a first coating to the device wherein the first coating:

a) increases the biocompatibility and hemocompatibility of the blood-contacting surface;

b) is adapted to deliver therapeutic amounts of therapeutic drugs into the blood;

c) comprises a polymeric adhesion enhancer; and

d) comprises at least one of the therapeutic drugs wherein therapeutic drugs include:

i) heparin and

ii) heparin derivatives.

61. (new) The method of claim 60 wherein the implantable medical device is a stent.

62. (new) A method of coating an implantable medical device wherein the method comprises applying a coating to the device wherein the coating:

a) increases the biocompatibility and hemocompatibility of the blood-contacting surface and

b) is adapted to deliver therapeutic amounts of therapeutic drugs into the blood;

c) comprises at least one of the therapeutic drugs wherein therapeutic drugs include:

i) heparin and

ii) heparin derivatives; and

d) at least one adhesion enhancer.

63. (new) The method of claim 60 further comprising applying at least one additional coating wherein the additional coating or coatings are the same as or different from the first coating and the additional coating(s)

a) increase the biocompatibility and hemocompatibility of the blood-contacting surface;

b) are adapted to deliver therapeutic amounts of therapeutic drugs into the blood;

c) comprise a polymeric adhesion enhancer; and

d) comprise at least one of the therapeutic drugs wherein therapeutic drugs include:

i) heparin and

ii) heparin derivatives.

64. (new) A method of coating a blood-contacting surface with a heparin-containing compound comprising:

a) applying a first hemocompatible coating to the surface wherein the first hemocompatible coating is sufficiently tightly bonded to the surface so as to remain on the surface in contact with blood; and,

b) applying at least one second hemocompatible coating sequentially on the first hemocompatible coating wherein the at least one second hemocompatible coating comprises

i) one or more therapeutic heparin-containing compounds releasable into blood; and

ii) an adhesion enhancer.

65. (new) A method as in claim 64 wherein the first hemocompatible layer includes a heparin-containing compound.

66. (new) A method as in claim 64 further comprising roughening the surface prior to coating.

67. (new) A method as in claim 64 further comprising applying a primer layer to the surface prior to applying the first hemocompatible coating, wherein the primer layer enhances adhesion of the first hemocompatible coating to the surface.

68. (new) A method as in claim 67 wherein the primer layer is selected from the group consisting of heparin-containing compounds, ethylene vinyl alcohol copolymer, polycystine, polylysine and reactive silanes including trimethoxysilanes.

69. (new) A method as in claim 67 wherein the primer layer contains at least one chlorosilane compound.

70. (new) A method as in claim 69 wherein the at least one chlorosilane has a functional head.

71. (new) A method as in claim 70 wherein the functional head of the at least one chlorosilane has functionality selected from the group consisting of unsaturated functionality, amine functionality, carboxyl functionality.

72. (new) A method as in claim 71 wherein the functionality is modified by polyethylene glycol or hyaluronic acid.

73. (new) A method as in claim 70 wherein the at least one second hemocompatible layer comprises a plurality of layers and wherein the plurality of layers have varying properties.

74. (new) A method as in claim 73 wherein the varying properties comprise varying compositions.

75. (new) A material having a hemocompatible surface produced by the method of claim 64.

76. (new) A medical device wherein at least one surface thereof contacts blood and wherein at least a portion of the blood contacting surface is the material of claim 75.

77. (new) A medical device as in claim 76 wherein the medical device is an endoluminal stent.

78. (new) A method of coating a blood-contacting surface with a heparin-containing compound comprising:

a) providing a formulation containing at least one heparin-containing compound and at least one adhesion enhancer; and,

b) coating the surface with the formulation,

wherein the formulation is adapted to deliver therapeutic amounts of heparin-containing compounds into the blood.

79. (new) A method as in claim 78 wherein the at least one adhesion enhancer is selected from the group consisting of polyethylene glycol, polyethylene oxide, polyvinylpyrrolidone, polyvinyl alcohol, polycaprolactone, polyglycolic acid, ethylene vinyl alcohol copolymer, hyaluronic acid, polyurethanes, copolymers of polycaprolactone and polyglycolic acid, copolymers of polycaprolactone and polyethylene glycol, segmented polyurethanes and mixtures thereof.

80. (new) A method as in claim 79 wherein the coating is performed by dip coating.

81. (new) A method as in claim 78 further comprising roughening the surface prior to coating.

82. (new) A material having a hemocompatible surface produced by the method of claim 78.

83. (new) A medical device wherein at least one surface thereof contacts blood and wherein at least a portion of the blood contacting surface is the material of claim 82.

84. (new) A medical device as in claim 83 wherein the medical device is an endoluminal stent.

85. (new) A method of coating a blood-contacting surface with a heparin-containing compound comprising:

a) roughening the surface prior to coating; and,

b) coating the surface with a heparin-containing compound; and,

c) baking the surface and the coating thereon sufficient to affix the coating to the surface

wherein the coating is adapted to deliver therapeutic amounts of heparin-containing compounds into the blood.

86. (new) A method as in claim 85 wherein the baking is at a temperature from approximately 50 degree C to approximately 100 degree C.

87. (new) A method as in claim 85 wherein the coating is performed by dip coating.

88. (new) A method as in claim 85 wherein the roughening is performed by argon plasma etching.

89. (new) A material having a hemocompatible surface produced by the method of claim 85.

90. (new) A medical device wherein at least one surface thereof contacts blood and wherein at least a portion of the blood contacting surface is the material of claim 89.

91. (new) A medical device as in claim 90 wherein the medical device is an endoluminal stent.

92. (new) A heparin-containing composition for coating onto a blood-contacting surface comprising ethylene vinyl alcohol copolymer, at least one heparin complex, dimethyl sulfoxide and tetrahydrofuran.

93. (new) A heparin-containing composition as in claim 92 further comprising dimethyl acetamide.

94. (new) A heparin-containing composition as in claim 92 wherein the ethylene vinyl alcohol copolymer is about 2.2% by weight of the composition.

95. (new) A heparin-containing composition as in claim 94 wherein the heparin complex is from about 0.6% by weight to about 2.3% by weight of the composition.

96. (new) A heparin-containing composition as in claim 93 wherein the ethylene vinyl alcohol copolymer is about 2% by weight of the composition.

97. (new) A heparin-containing composition as in claim 94 wherein the heparin-complex is from about 1.1% by weight to about 2.0% by weight of the composition.

98. (new) A medical device wherein at least one surface thereof contacts blood and wherein at least a portion of the blood contacting surface is coated with the material of claim 92.

99. (new) A medical device as in claim 98 wherein the medical device is an endoluminal stent.